

WHAT IS CLAIMED IS:

1. An endoscopic device comprising:
 - a shaft having a lumen for insertion of an endoscope therethrough;
 - 5 a headpiece defining a workspace and disposed at a distal end of the shaft;
 - a handle disposed at a proximal end of the shaft;
 - a plunger disposed at the distal end of the
 - 10 shaft and movable between a retracted and extended position, wherein in the extended position the plunger interacts with at least a portion of the headpiece to capture a vessel therebetween;
 - an actuation means for moving the plunger
 - 15 between the retracted and extended positions; and
 - a ligation means for cauterizing the vessel captured between the plunger and the portion of the headpiece.
2. The vessel harvesting device as claimed in
- 20 claim 1, further comprising a transection means for transecting the cauterized vessel.
3. The vessel harvesting device as claimed in claim 1, wherein the portion of the headpiece comprises a hook projecting into the workspace.
- 25 4. The vessel harvesting device as claimed in claim 1, wherein the headpiece comprises side projections

extending from an edge of the headpiece and projecting towards the plunger of the headpiece, the side projections facilitating the positioning of the vessel for capture, and for dissecting around the vessel.

5 5. The vessel harvesting device as claimed in claim 2, wherein the ligation means comprises the plunger having at least two electrodes of opposite polarity separated by at least one dielectric layer, the electrodes being energized with RF energy to cauterize the captured
10 vessel.

6. The vessel harvesting device as claimed in claim 5, wherein the transection means comprises the plunger having an extendable knife separated from each of the at least two electrodes by a dielectric layer.

15 7. The vessel harvesting device as claimed in claim 6, wherein the at least two electrodes comprises a first and second electrode and one of the first and second electrodes is a knife separated from the other electrode by at least one dielectric layer.

20 8. The vessel harvesting device as claimed in claim 1, wherein the portion of the headpiece comprises a slidable hook projecting into the workspace, movable from an extended to a retracted position, wherein the hook interacts with the plunger to capture the side branch when
25 in the extended position.

9. The vessel harvesting device as claimed in claim 8, further comprising a control rod actuation means for moving the slidable hook between the extended and retracted positions.

5 10. The vessel harvesting device as claimed in claim 9, wherein the control rod actuation means comprises a flexible control rod operably connected to the slidable hook for sliding the slidable hook between the extended and retracted positions, the control rod having an
10 extension stop which limits the travel of the slidable hook and also having a capturing means which prevents the slidable hook and the control rod from entering the workspace.

15 11. The vessel harvesting device as claimed in claim 10, wherein the control rod is formed of a flexible material conforming to the shape of the headpiece while transitioning from the retracted to the extended position and maintaining its conformance with the headpiece when in the extended position.

20 12. A method of harvesting a vessel comprising:
 providing a vessel harvesting device comprising a shaft having a lumen for insertion of an endoscope therethrough, a transparent headpiece defining a workspace and disposed at a distal end of the shaft, a handle
25 disposed at a proximal end of the shaft, a plunger disposed at the distal end of the shaft and movable

between a retracted and extended position, wherein in the extended position the plunger interacts with at least a portion of the headpiece to capture a vessel therebetween, an actuation means for moving the plunger
5 between the retracted and extended positions, a ligation means for cauterizing the side branch, and a transection means for transecting the cauterized side branch;
locating a vessel to be harvested;
making an incision to expose a portion of the
10 vessel;
inserting the vessel harvesting device into the patient through the incision;
dissecting the vessel from the surrounding tissue with the vessel harvesting device to expose a side
15 branch of the vessel;
actuating the plunger in the distal direction to capture the side branch between the plunger and the portion of the headpiece;
applying RF energy to cauterize the captured
20 side branch;
transecting the cauterized side branch using the transection means;
ligating and transecting at the proximal and distal ends of the vessel; and
25 removing the vessel.

13. The method of harvesting a vessel as claimed in claim 12, wherein the ligating of the side branch comprises applying RF energy to the side branch using first and second electrodes, wherein the first and second

electrodes are of different polarity and are housed in the plunger.

14. The method of harvesting vessels as claimed in claim 12, wherein the transecting of the side branch
5 comprises extending a knife housed in the plunger towards the distal end of the device.

15. The method of harvesting vessels as claimed in claim 12, wherein the capturing comprises placing the headpiece over the side branch and extending the plunger
10 in the distal direction to allow the side branch to be compressed between the plunger and the portion of the headpiece.

16. The method of harvesting vessels as claimed in claim 12, wherein the transecting of the side branch
15 comprises advancing a knife housed in the lower jaw towards the distal end of the device subsequent to the ligation of the side branch vessel.

17. The method of harvesting vessels as claimed in claim 13, wherein the actuating comprises extending a
20 slidable hook in the distal direction prior to extension of the plunger.